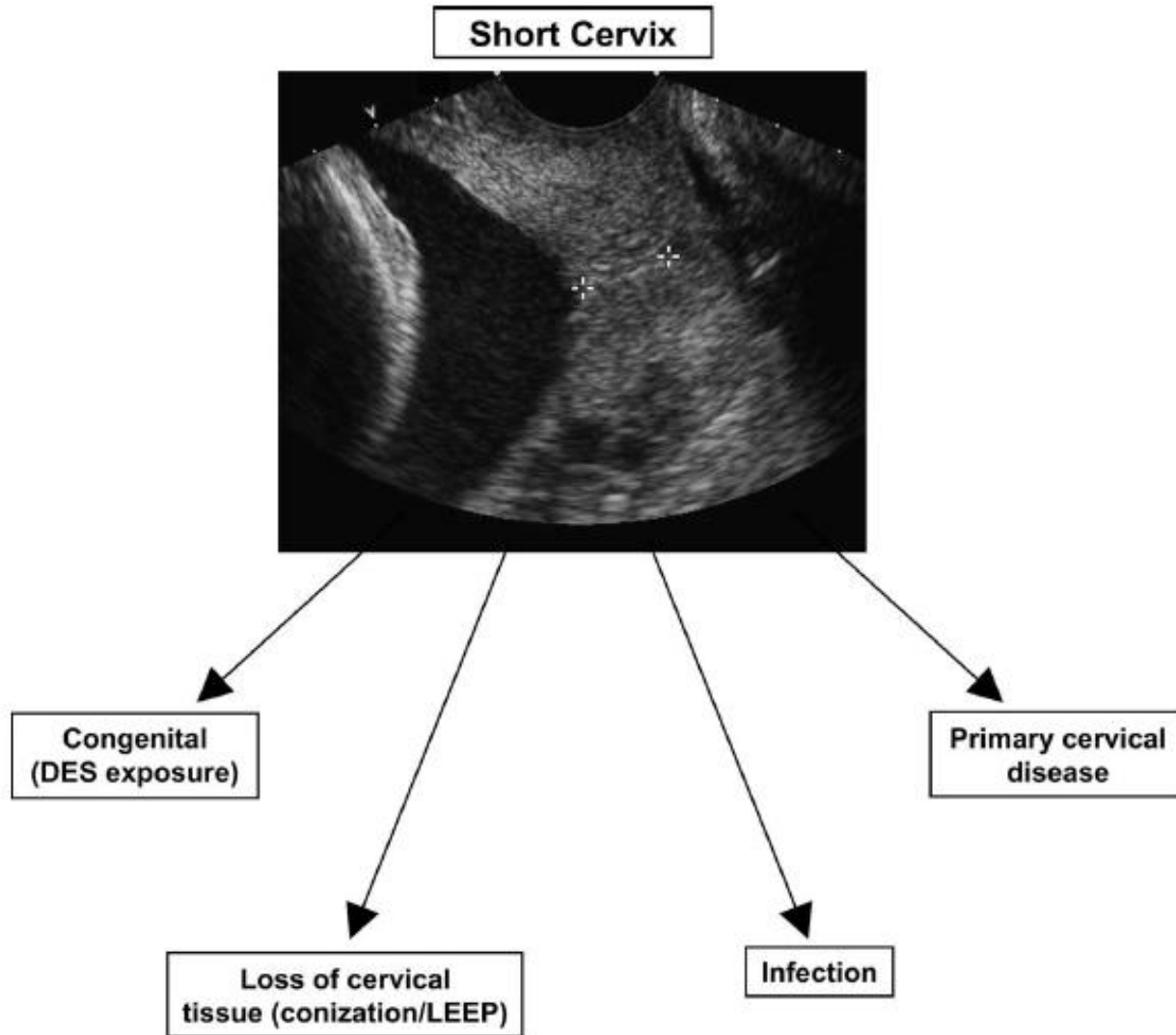


# Cerklage vid cervixinsufficiens: erfarenheter från Malmö



# Cervixinsufficiens

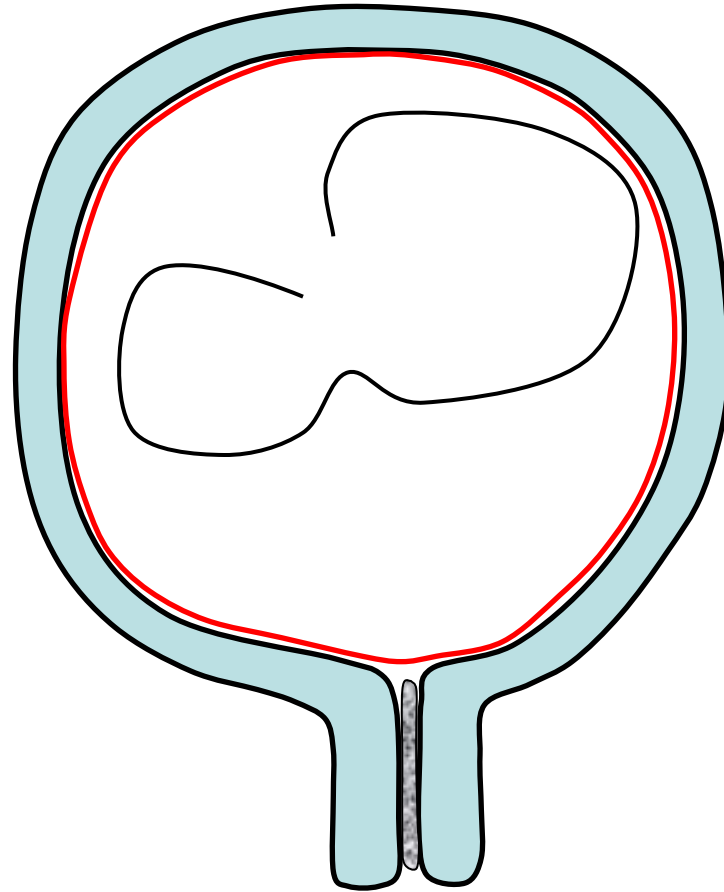
- Cole, Culpepper & Rowland (Practice of Physick, 1658)
  - ”... by abortion and hard labor and childbirth ... the fibers of the womb is broken in pieces ... and the inner orifice ... overmuch slackened”
- Gream (Lancet, 1865): cervical incompetence

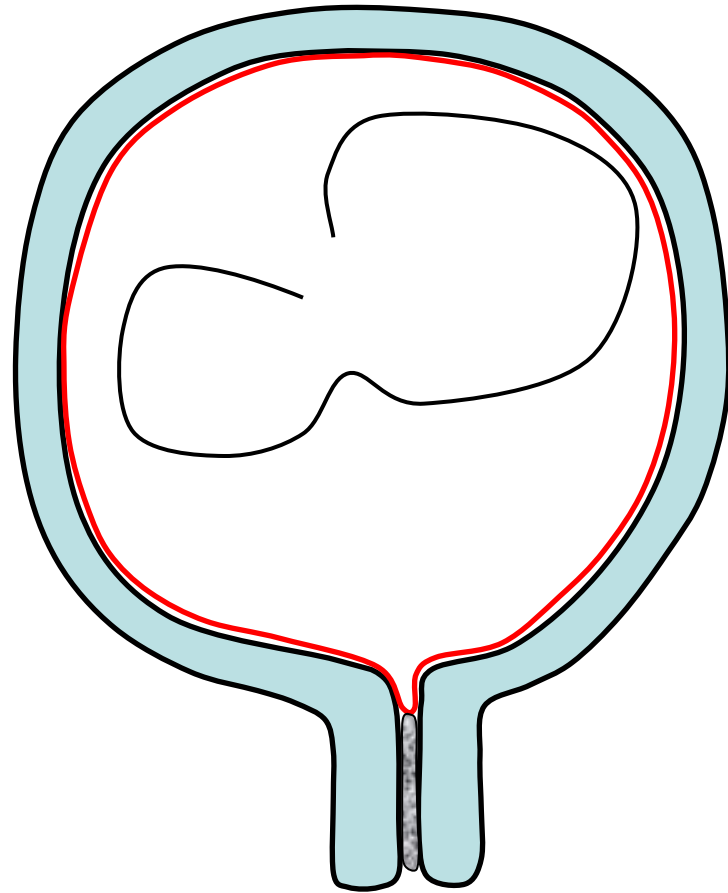


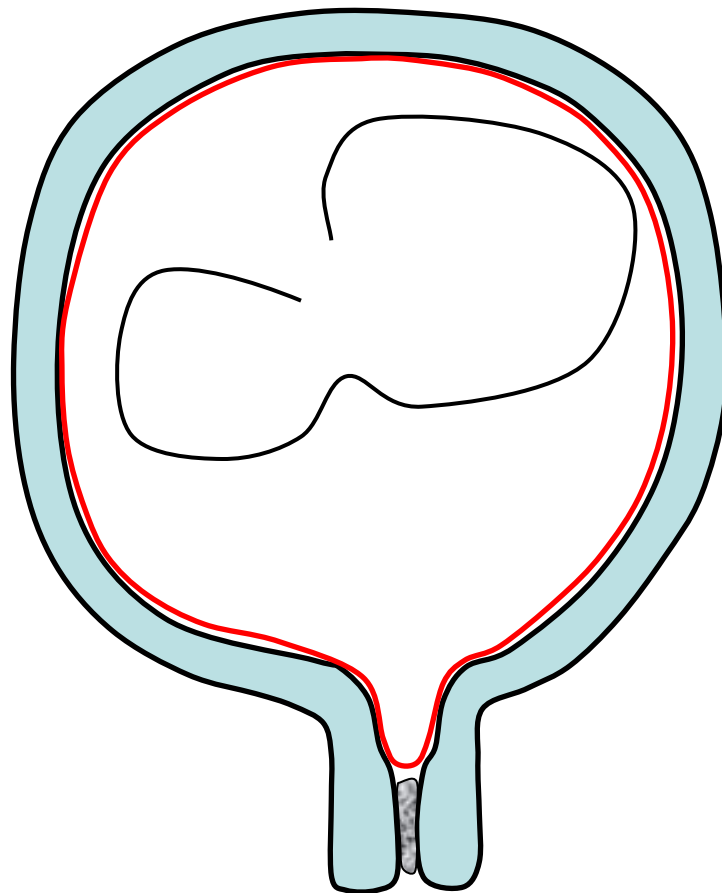
**The syndromic nature of a short cervix**

- "The inability of the uterine cervix to retain a pregnancy in the absence of contractions or labor" (Harger)
- Typisk patient (Romero et al., 2006)
  - Upprepade midtrimester aborter/tidig förtidsbörd
  - Antagande att cervix öppnar sig utan kontraktioner
  - Symptom: tryck nedåt, ingen blödning, kort förlossning, levandefött foster

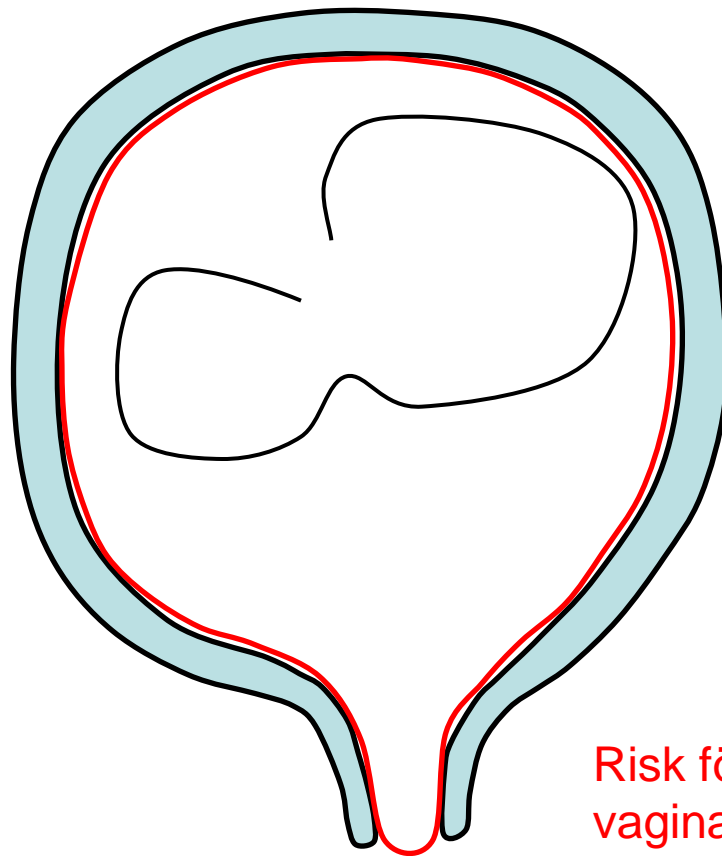
# Naturalhistoria cervixinsufficiens







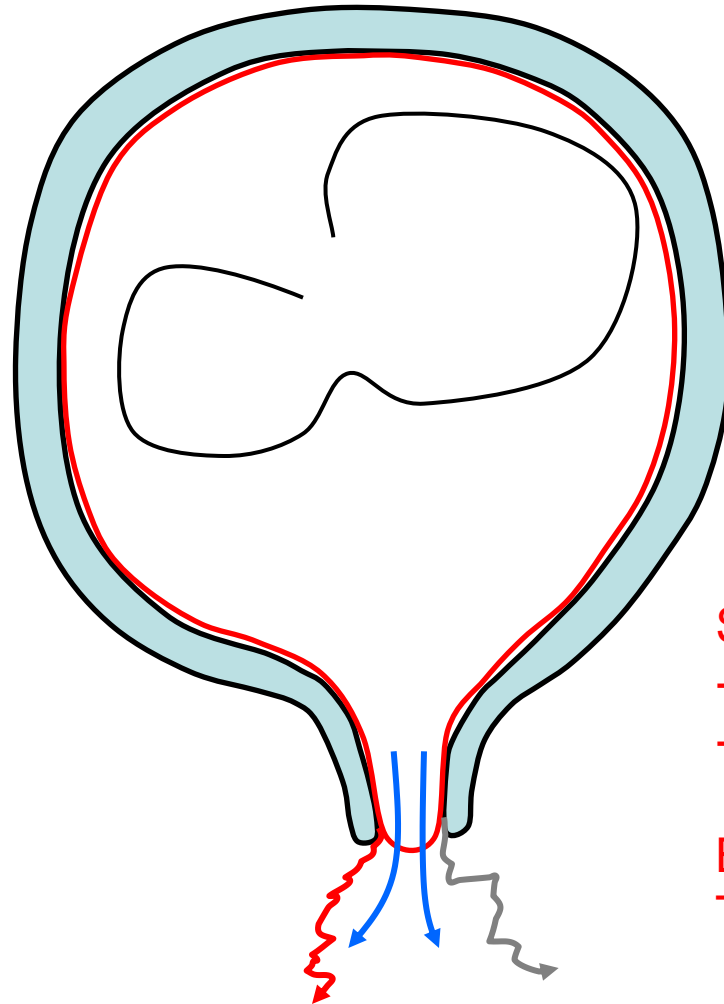
Typ av tunnelering har betydelse = TVYU: Trust Your Vaginal Ultrasound (Iams)



Risk för vandring mikroorganismer  
vagina → uterus, amnion

Missuppfattning att korioamnionit  
≠ cervixinsufficiens





Slemmig/vattnig flytning

-- tunnt slem?

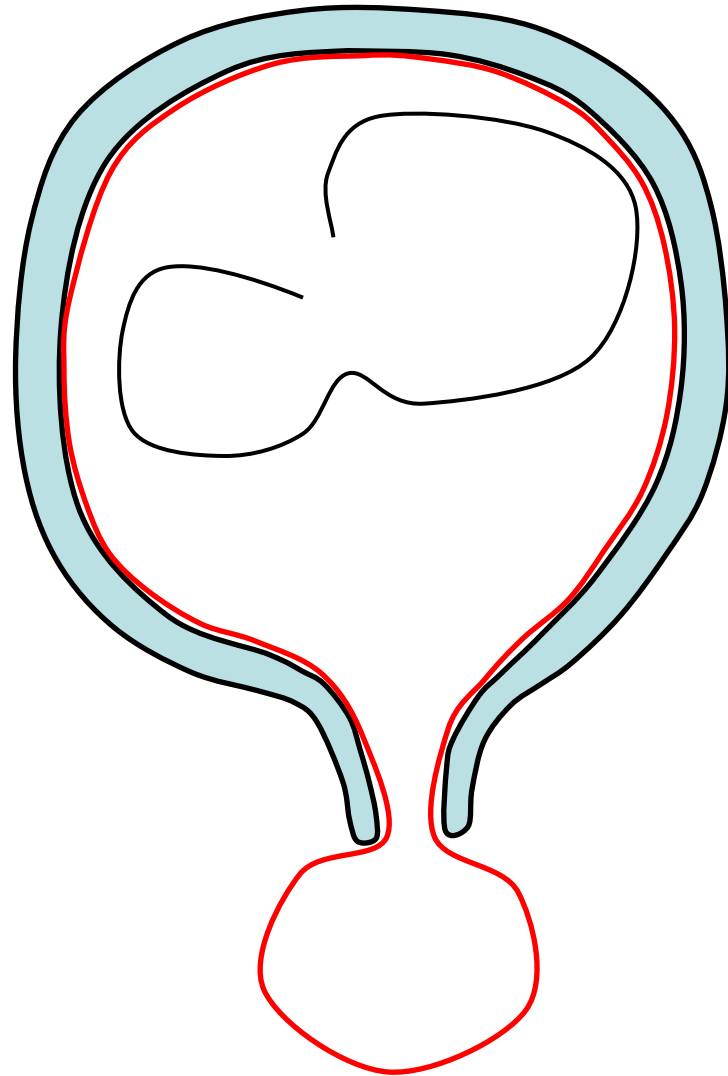
-- transmembranöst  
fostervatten?

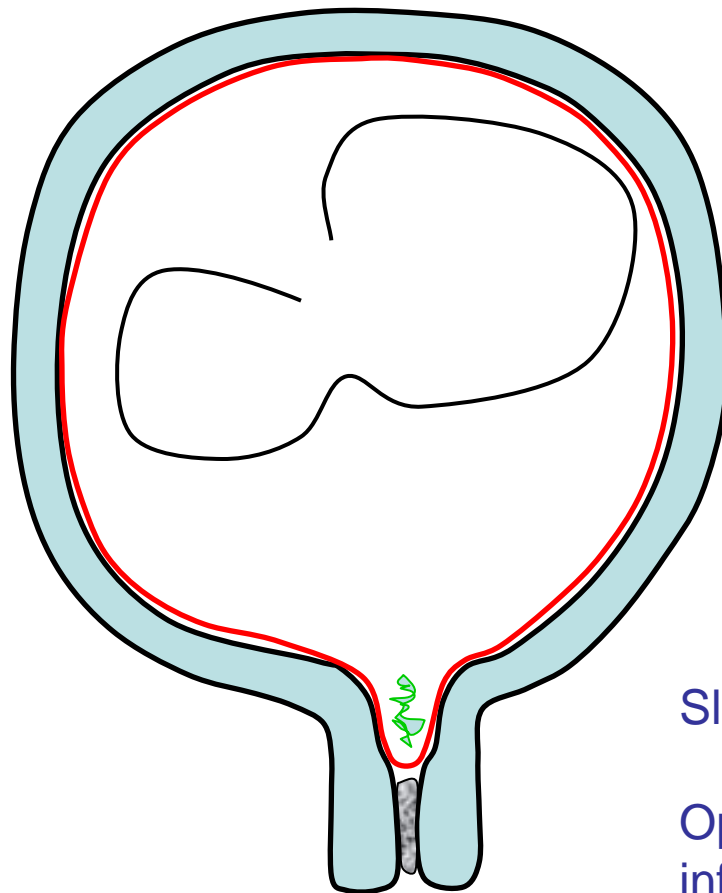
Blod

Tyngdkänsla

Timmar → dagar







Sludge → sämre prognos

Operera ej vid tecken på  
infektion eller kontraktioner

Avvakta 1 dygn med akut  
operation

# Cerklage cervix uteri

- VN Shirodkar, Bombay (1955)
  - N = 30,  $\geq 4$  aborter (även 1a trimestern)
  - ”95% beror på svaghet i cervixsfinktern”
- Ian McDonald, Melbourne (1957)
  - N = 70, ”oundvikligt missfall”

# Malmö juni 1998 – januari 2012

- Nashmil Amiri Nateghi, med.stud. Odense universitet (2008)
- Desiree Tevnér, med.stud. Lunds universitet (2012)
- Avslutade graviditeter
  - Primära/profylaktiska cerklage 105 st
  - Sekundära/terapeutiska cerklage 21 st
  - Inre cerklage 3 st

129

# Primära cerklage

- 77 kvinnor som fick  $42 \times 1 + 24 \times 2 + 5 \times 3 = 105$  cerklage
- 21 förstföderskor, 91 omföderskor
- Operation v  $13 \pm 1$  v (11-17)

## Indikationer primärt cerklage (N=114)

	Cerklage N=64	Sent missfall N=63	Prematur N=59	Konisering N=8
Cerklage	X	38	40	4
Sent missfall	38	X	16	4
Prematur	40	16	X	4
Konisering	4	4	4	X
Saknas / annan indik.	5	19	13	2



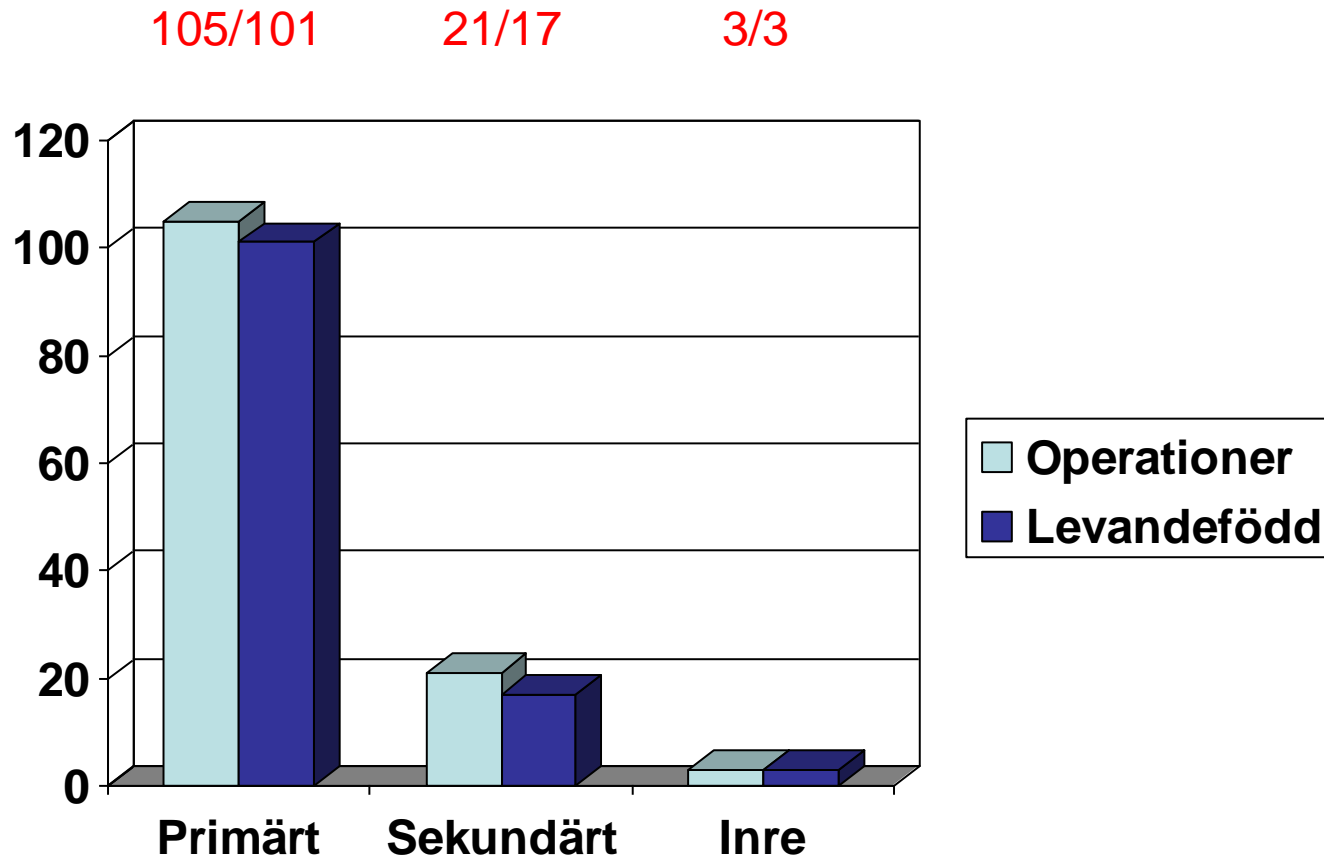
## Indikationer sekundärt cerklage (N=22)

	Cerklage N=2	Sent missfall N=8	Prematur N=4	Kon(er) N=1	Kort Cx N=6	Tunnel N=19	Bukt Hinnblåsa N=10
Cerklage	X	1	1	-	-	1	1
Sent missfall	1	X	1	1	3	5	3
Prematur	1	1	X	-	-	3	1
Kon(er)	-	1	-	X	1	1	-
Kort Cx	-	3	-	1	X	5	1
Tunnel	1	5	3	1	5	X	10
Buktande hinnblåsa	1	3	1	-	-	10	X
Saknas / annan indik.	-	-	1	-	1	1	-

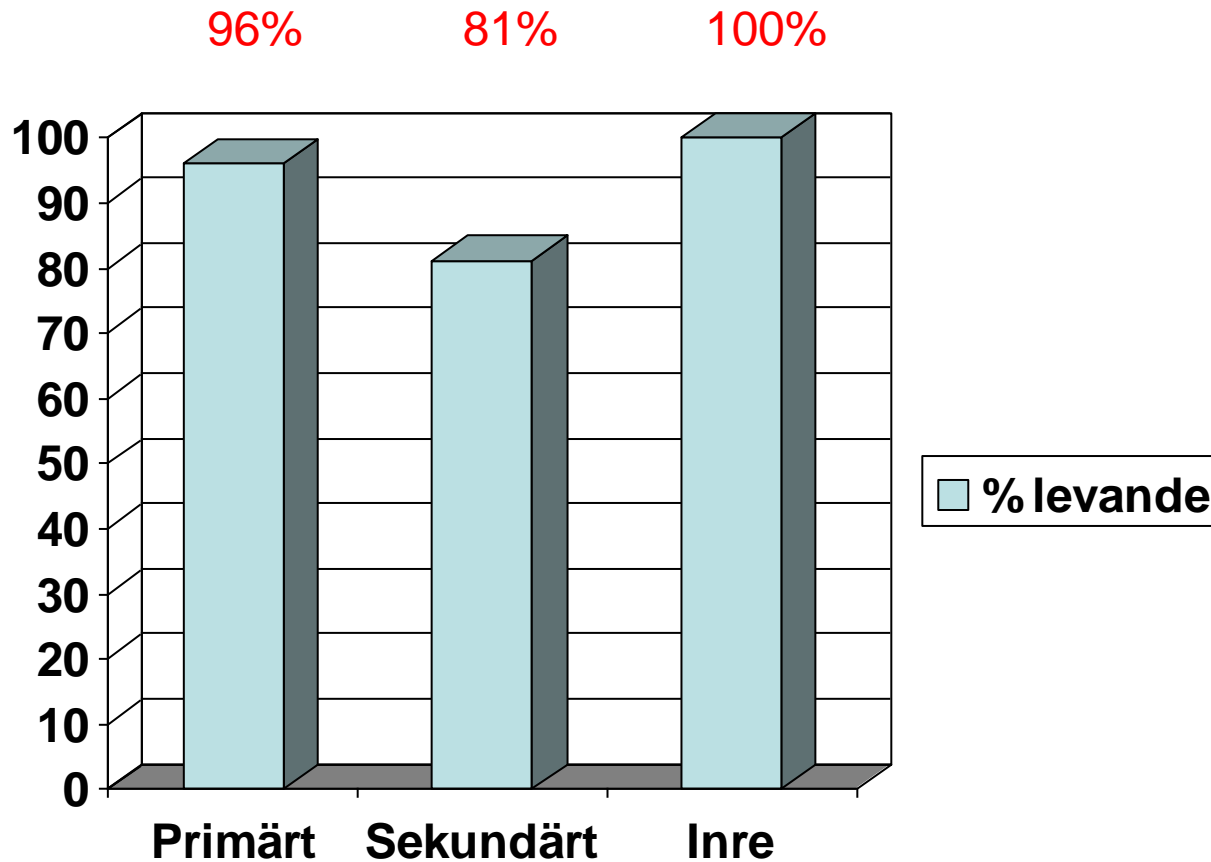
## Inre cerklage (N=5)

	BB	BB	SG	RT	BH
Missfall/ förlossn	v 16, 21	v 16, 21, 16	v 32	-	v 33, kon, 17, 24
Kon(er)	Ja (1)	Ja (1)	Ja (2)	Ja (1)	Ja (1)
Tidigare cerklage	Nej	Nej	Nej	Nej	Nej
IVF denna grav				Ja	
Cx längd preop mm	12	-	20	19	17
OP vecka	15	11	12	13	12
Kommentar	Missl reponera hinblåsa		Söker abort om ej op	Tveksam indikation	
Utfall	Abort v 15	Fullgången	Fullgången	Fullgången	Pågår

# Operationer/Levandefödda barn

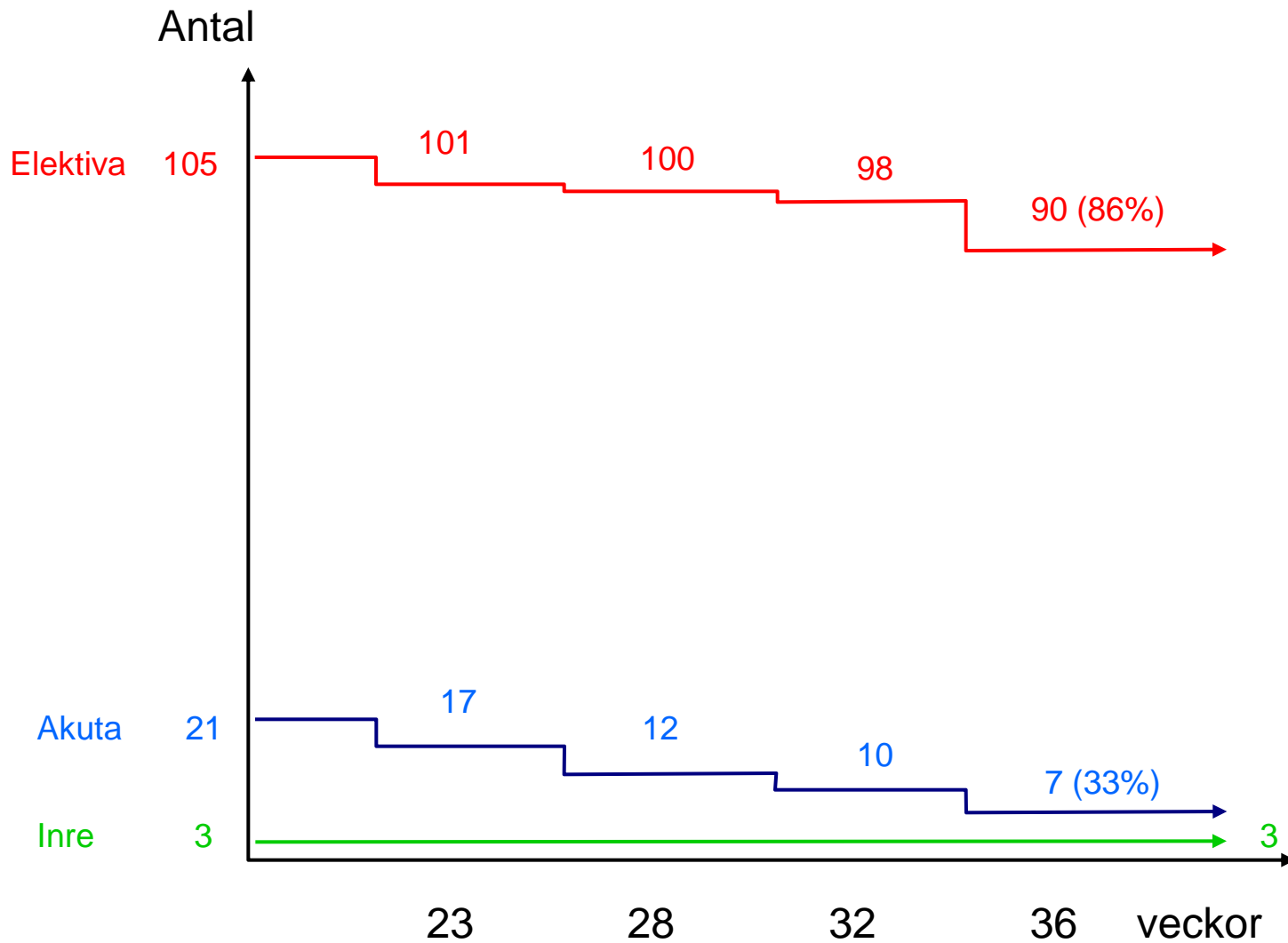


# Levandefödda barn

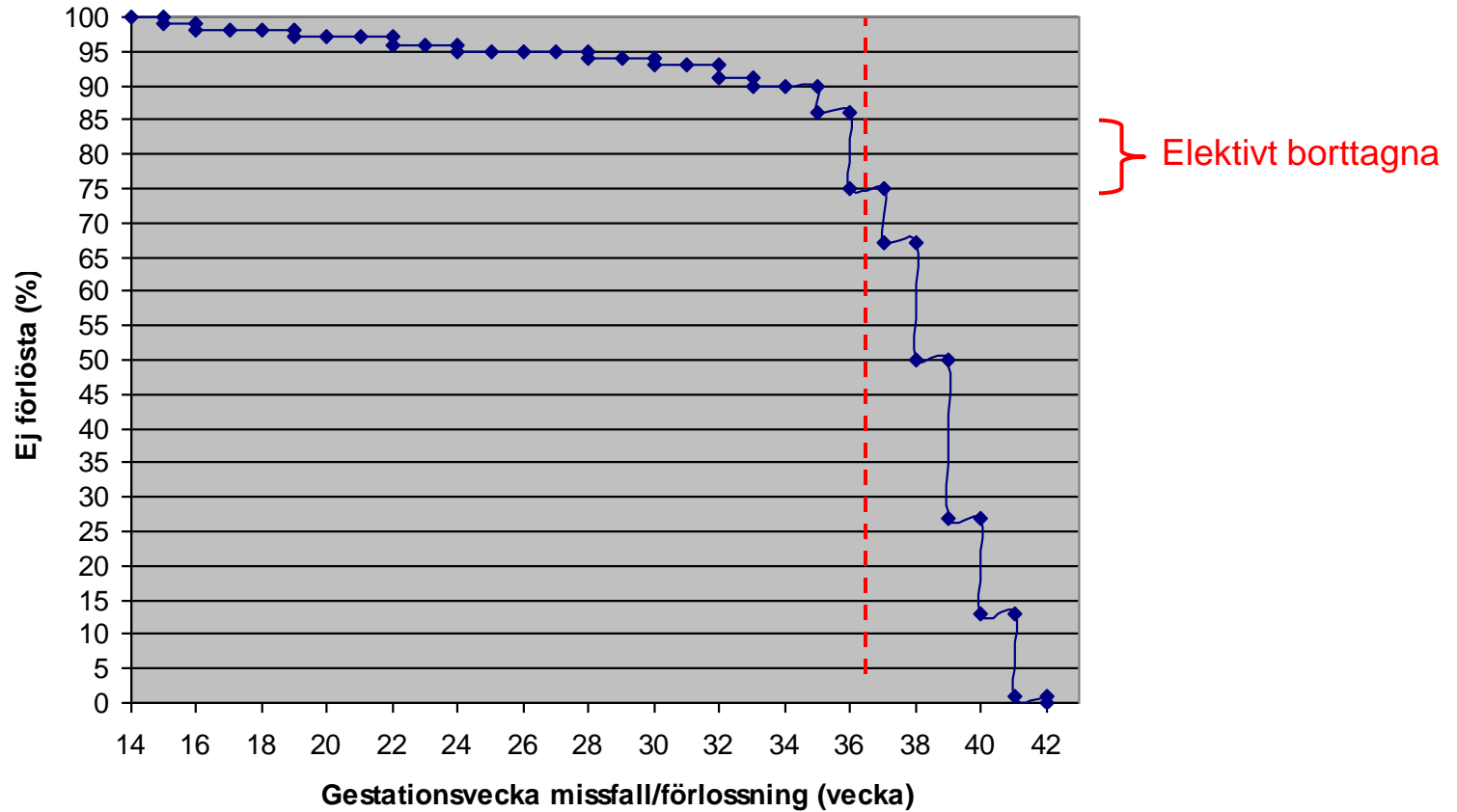


# Antal pågående graviditeter

Intention: avlägsna cerklage 37+ v



## Primära cerklage (N=105)



96% levandefödda barn  
86% nådde  $\geq 36$  v

# Sekundära cerklage

Kategori hinnblåsa	≥ 36 v	Levande födda
Endast tunnelering	3/10	8/10
Hinnblåsa i yttre modermunnen	1/4	3/4
Hinnblåsa 1 cm utom ymm	0/2	2/2
Hinnblåsa i vagina	0/2	1/2
<b>Totalt</b>	<b>4/18 (22%)</b>	<b>14/18 (78%)</b>

# Primära cerklage

- Misslyckanden → abort/extrem prematurbörd
  - 1 fall cerklageglidning v 22
  - 1 fall intrauterin infektion 1 v postop
  - 1 fall intrauterin infektion 2 v postop
  - 1 fall PPRM v 19
- Komplikationer
  - 1 fall smärtor → reoperation → → vesiko-vaginal fistel
- Alla barn födda  $\geq 23$  v överlevde primärt

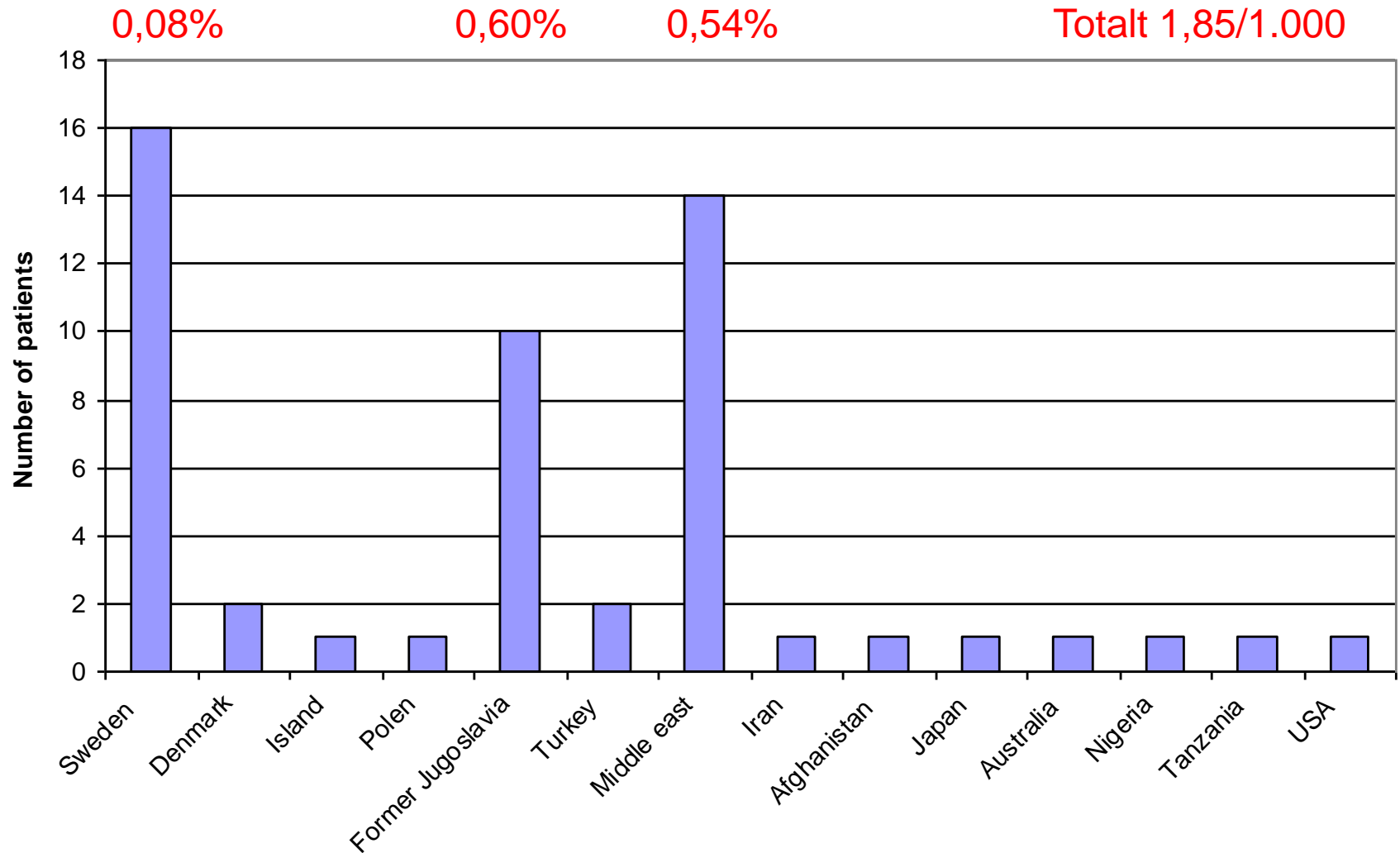


# Sekundära cerklage

- Misslyckanden
  - 1 fall gick ej att reponera timglasformade hinnsäcken
  - 1 fall tunnelering + infektion v 15 → antibiotika 1 v → normaliserade labprover → cerklage → IUFD + infektion v 18
  - 2 fall intrauterin infektion v 22
- Komplikationer
  - 1 fall vesiko-vaginal fistel efter op v 21
- Alla barn födda  $\geq 23$  v överlevde primärt
  - 1 fall tidig neonatal död sepsis v 25

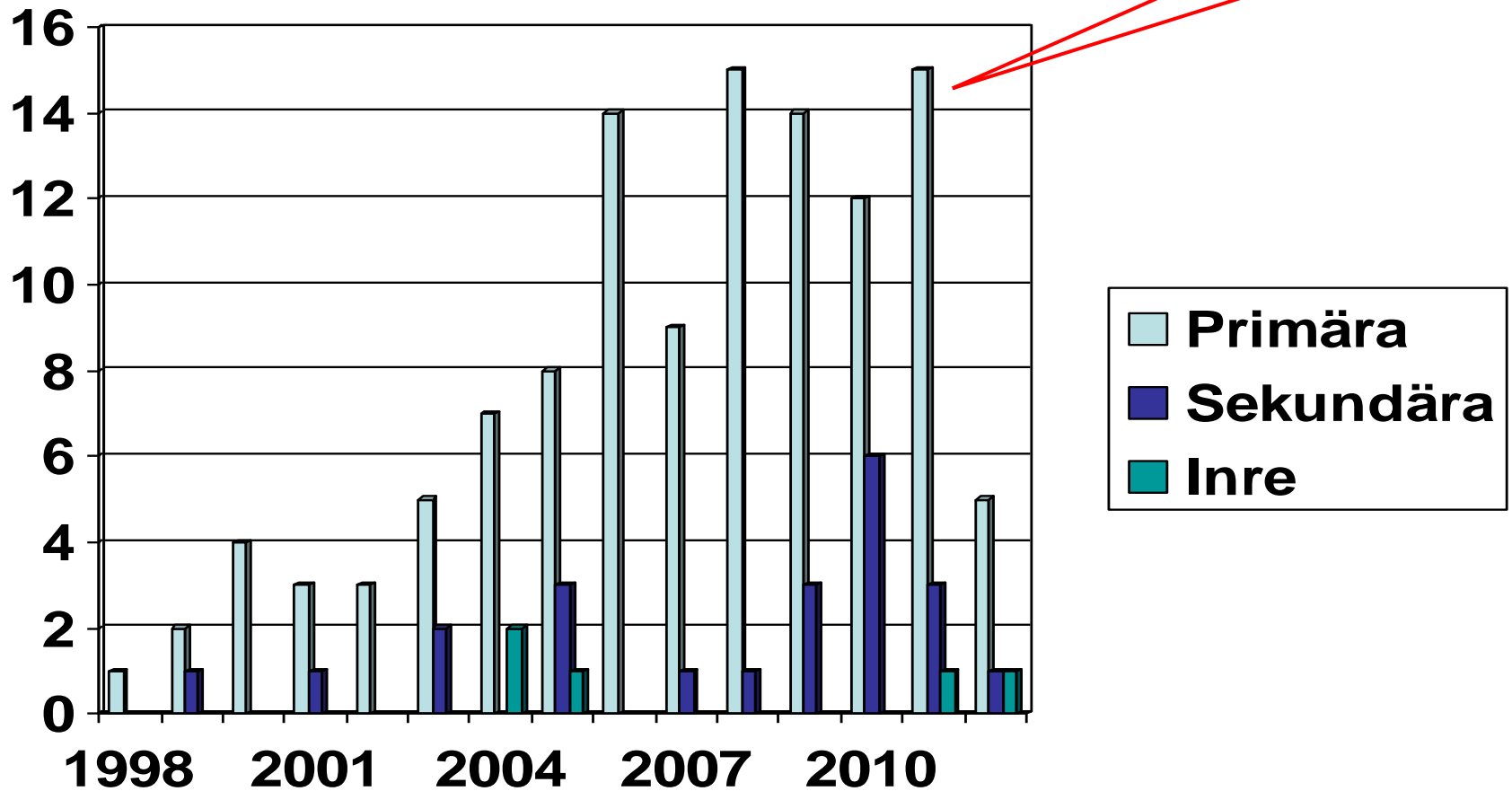
# Etnicitet (1998-2007)

Ethnicity in relation to cervical insufficiency



# Operationer 1998 - augusti 2012

3,7/1.000



# Prevalens cervixinsufficiens/cerklage

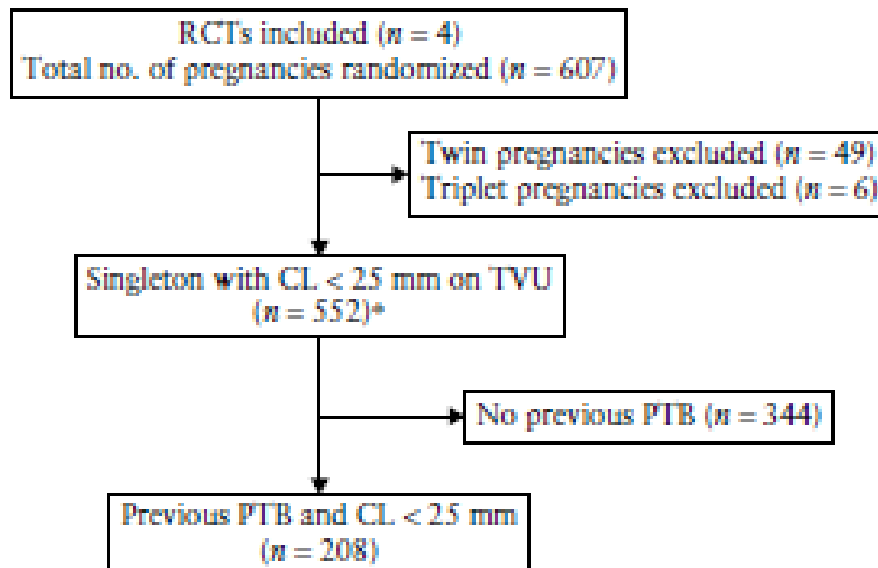
- Danmark 4,6/1.000 (Lidegaard, 1994)
- USA 3/1.000 (Berghella, 2011)
- Malmö 2,5/1.000 förlossningar
- "Onödiga" operationer → bättre utfall
- Omöjligt alltid veta om "rätt" patient opererats
- 1998-2012 Malmö
  - 1 fall av definitivt onödig operation
  - 2 fall av missbedömning

## Effectiveness of cerclage according to severity of cervical length shortening: a meta-analysis

V. BERGHELLA\*, S. M. KEELER†, M. S. TO‡, S. M. ALTHUISIUS§ and O. A. RUST¶

Divisions of Maternal-Fetal Medicine, Departments of Obstetrics and Gynecology, \*Jefferson Medical College of Thomas Jefferson University, Philadelphia and ¶Lehigh Valley Hospital and Health Network, Allentown, PA and †New York University, New York, NY, USA, ‡St Thomas's and Guy's Hospital, London, UK and §Department of Obstetrics and Gynecology, Maasstad Ziekenhuis, Rotterdam, The Netherlands

### Short cervix on 2<sup>nd</sup> trimester transvaginal ultrasound

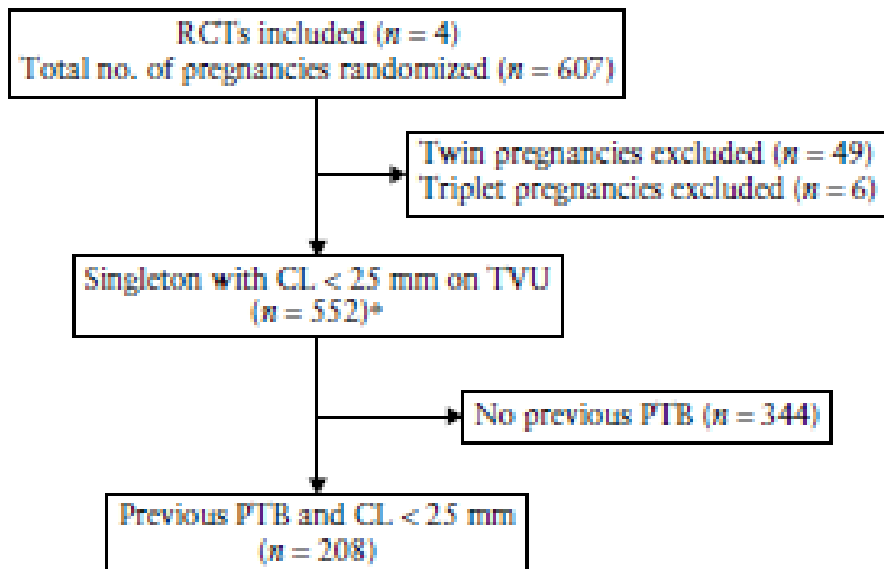


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### Short cervix on 2<sup>nd</sup> trimester transvaginal ultrasound



**Cerclage**   
**No cerclage** 

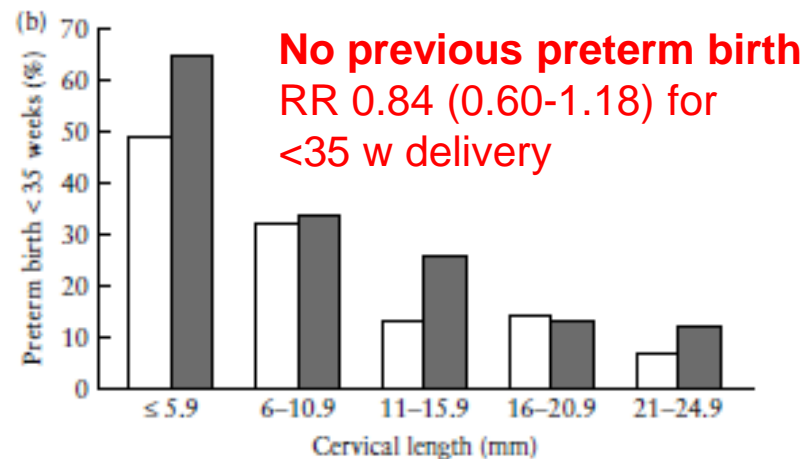
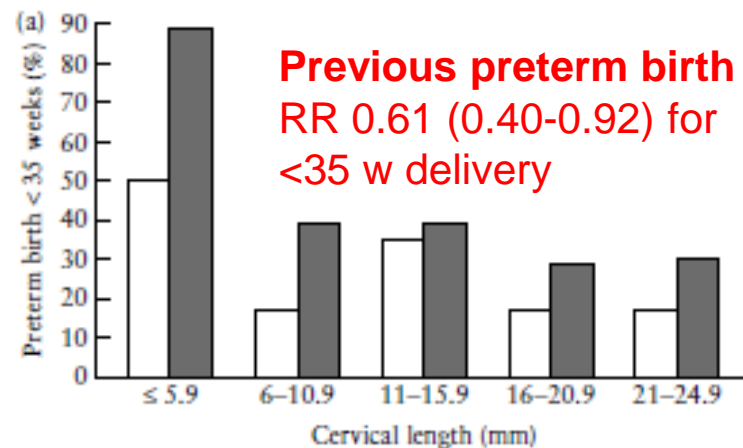


Figure 2 Incidence of preterm birth < 35 weeks as affected by cerclage (□) or no cerclage (■), stratified by different cervical length cut-offs in women with singleton gestations, a short cervical length and a previous preterm birth (a) or no previous preterm birth (b).

# Randomiserad studie akut cerklage

- Alhuisius et al., 2003
- Membraner vid/nedom y.m.m. <27 v
- 13 st cerklage + indomethacin → 7/13 >34 v
- 10 st sängläge → 0/10 >34 v

# International multicenter study on double cerclage for cervical incompetence

(Niels Jørgen Secher)

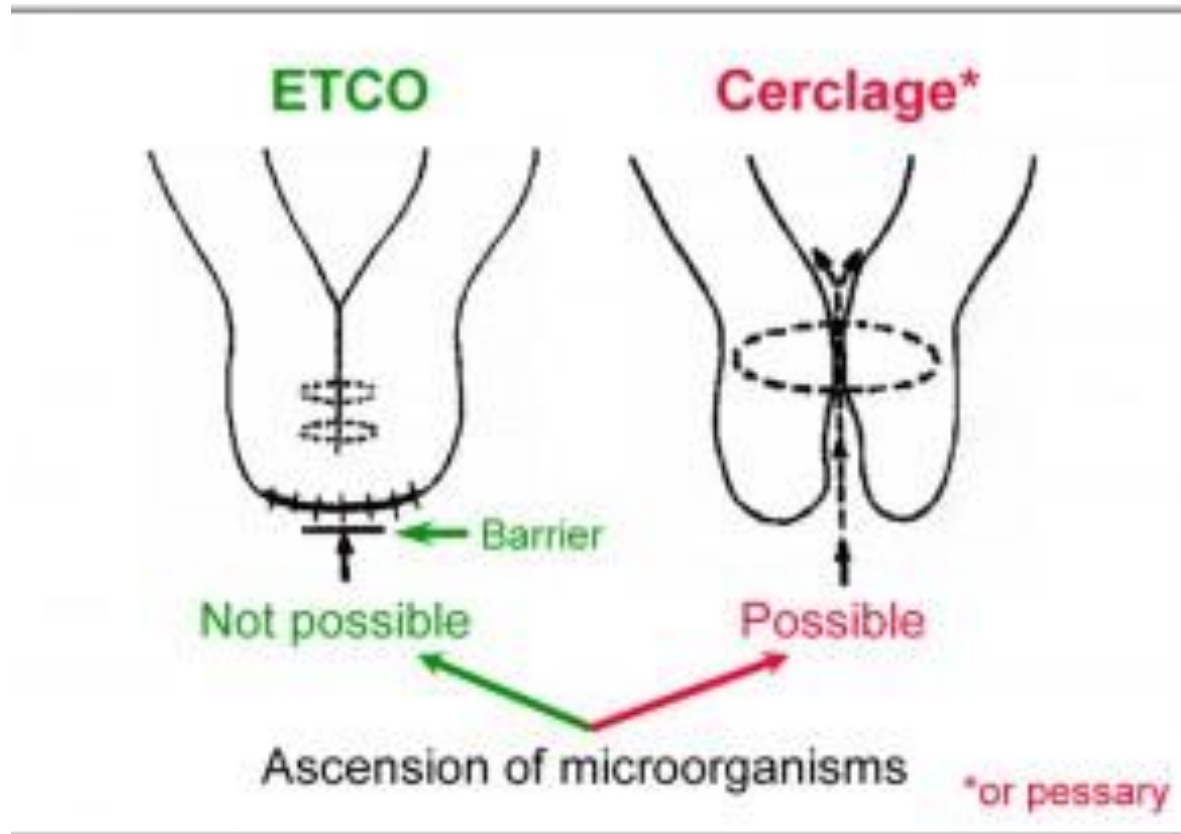


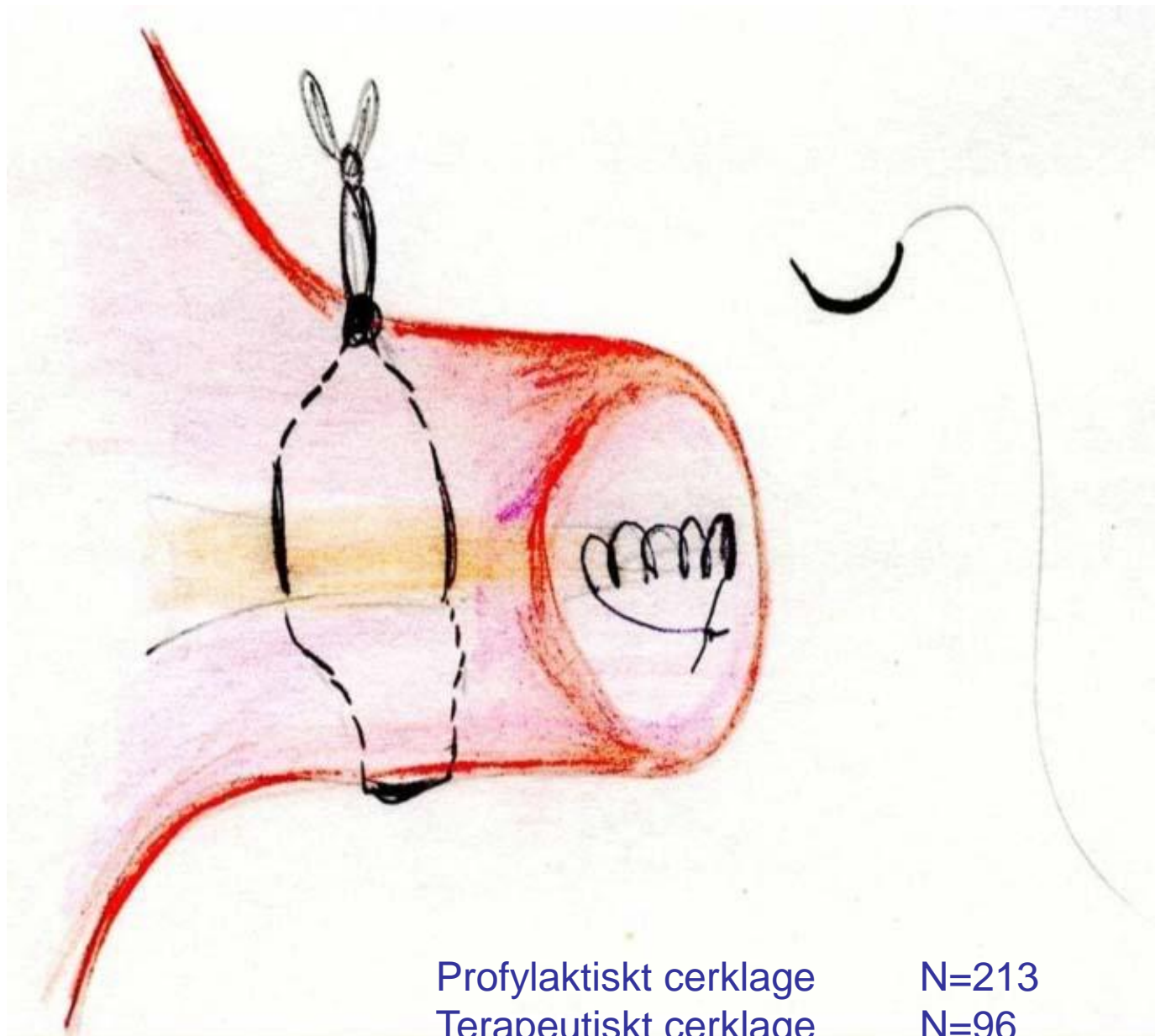
# Cx längre med flera cerklage?



# Hindra bakterier att ascendera?

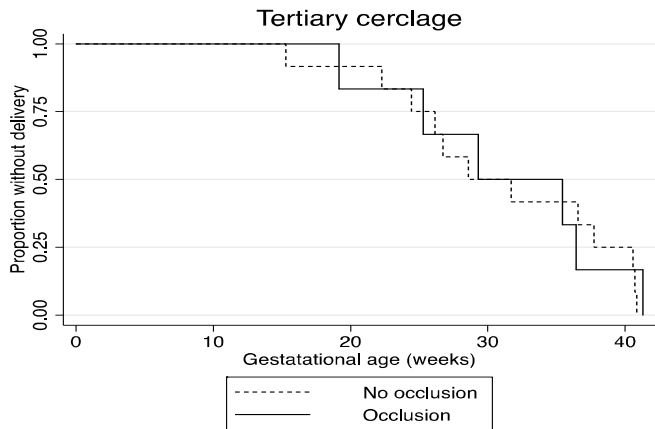
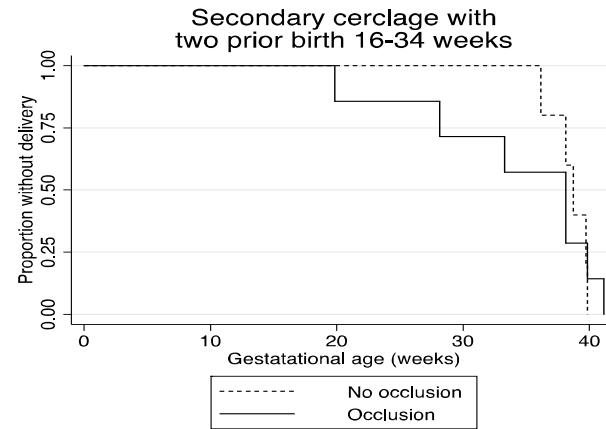
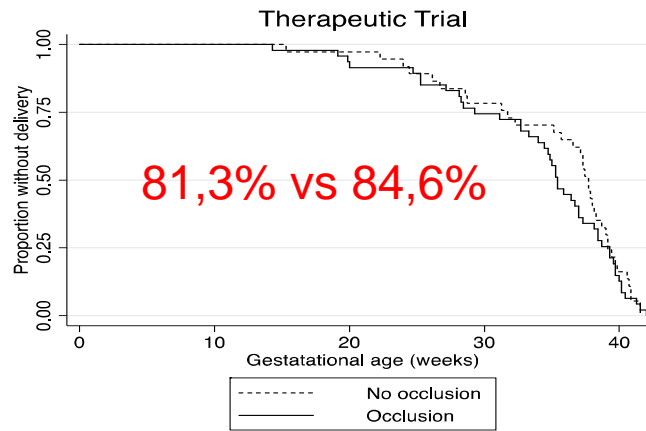
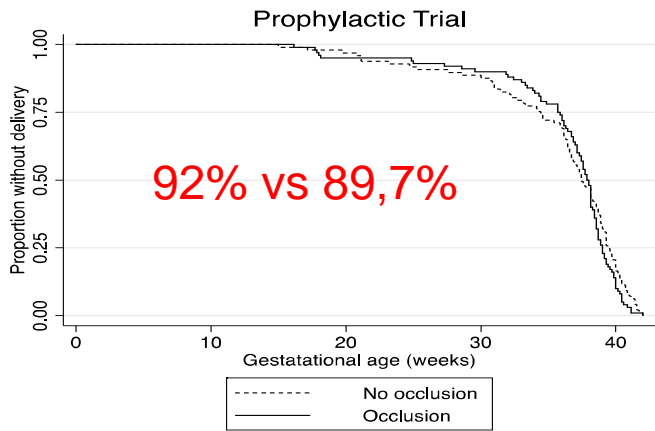
Early Total Cervix Occlusion





Profylaktiskt cerklage  
Terapeutiskt cerklage

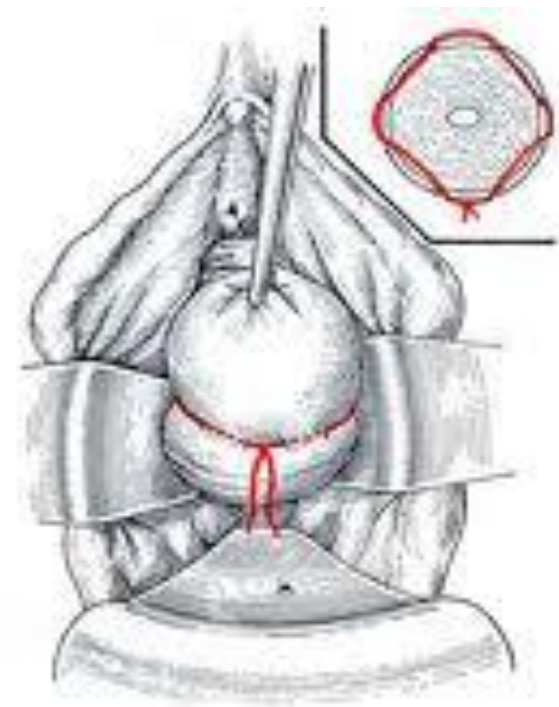
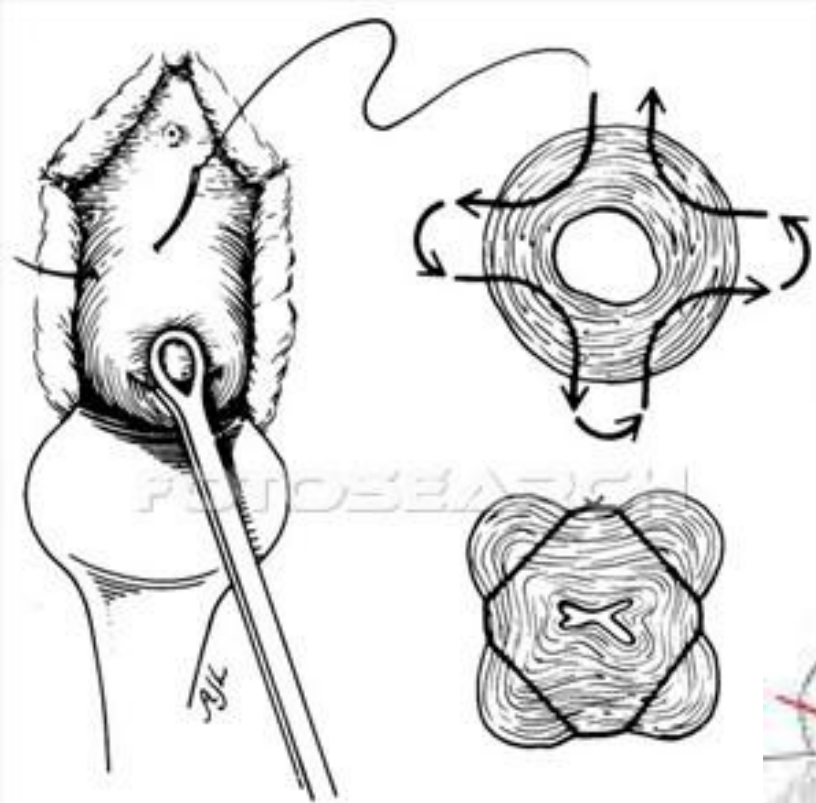
N=213  
N=96



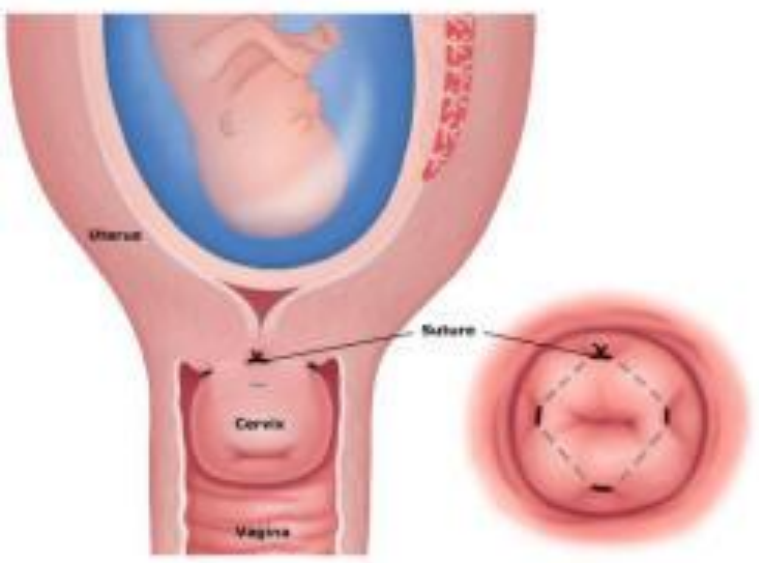
Ingen skillnad  
 -Take-home-baby rate  
 -Förtidsbörd  
 -Dagar på Neo-avd

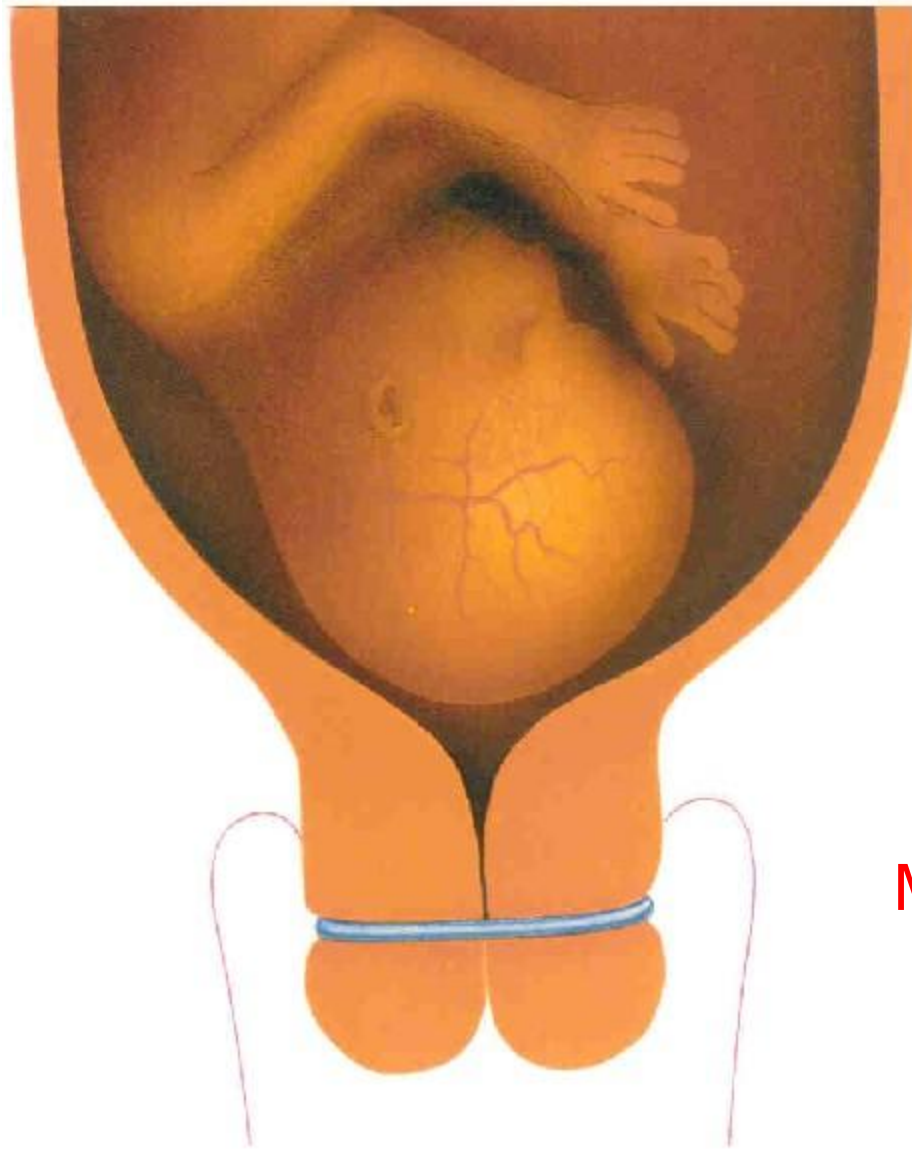


# McDonald cerklage

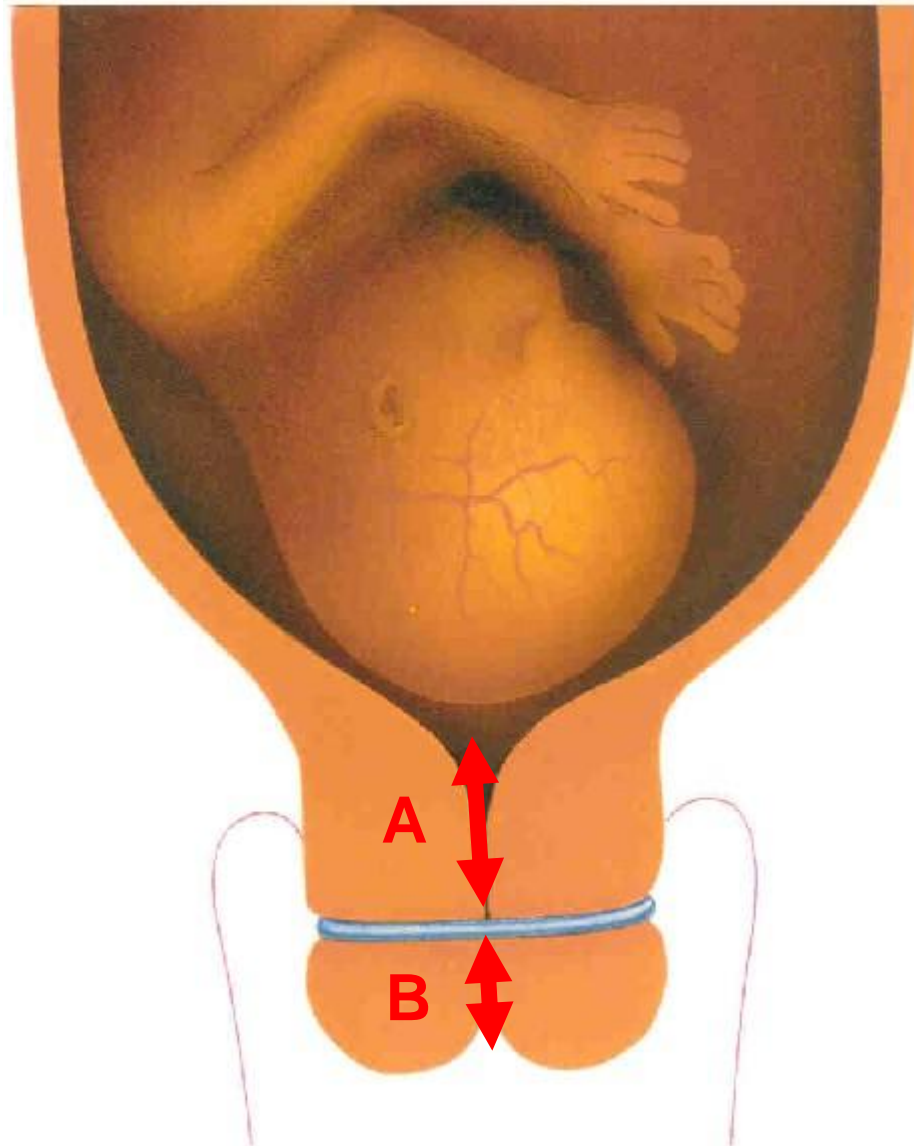


Cerclage du col d'après Harvitz.

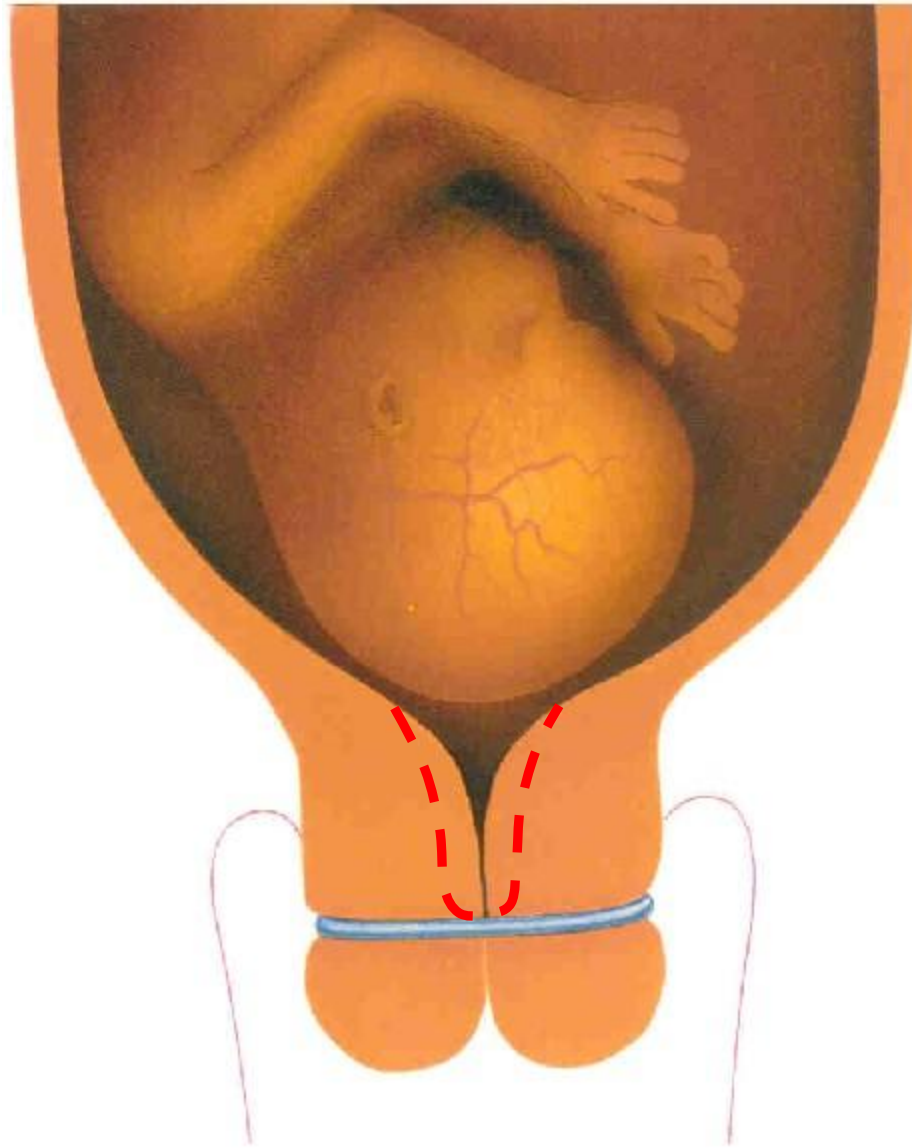




McDonald

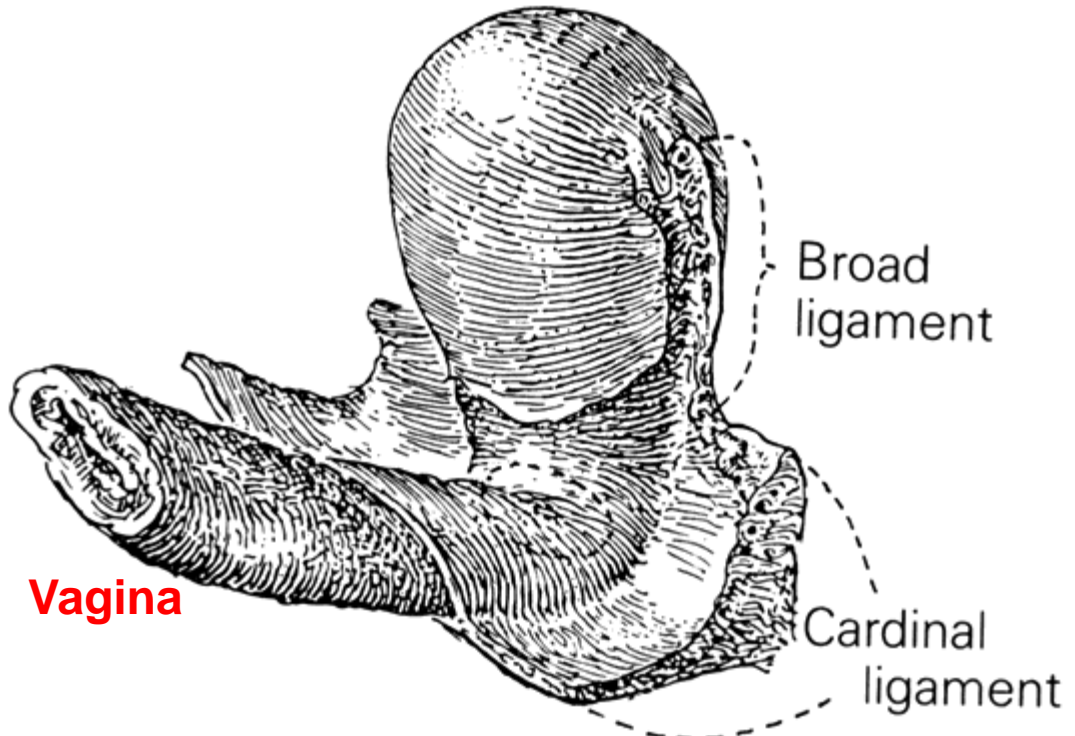






# Faktorer av betydelse (?)

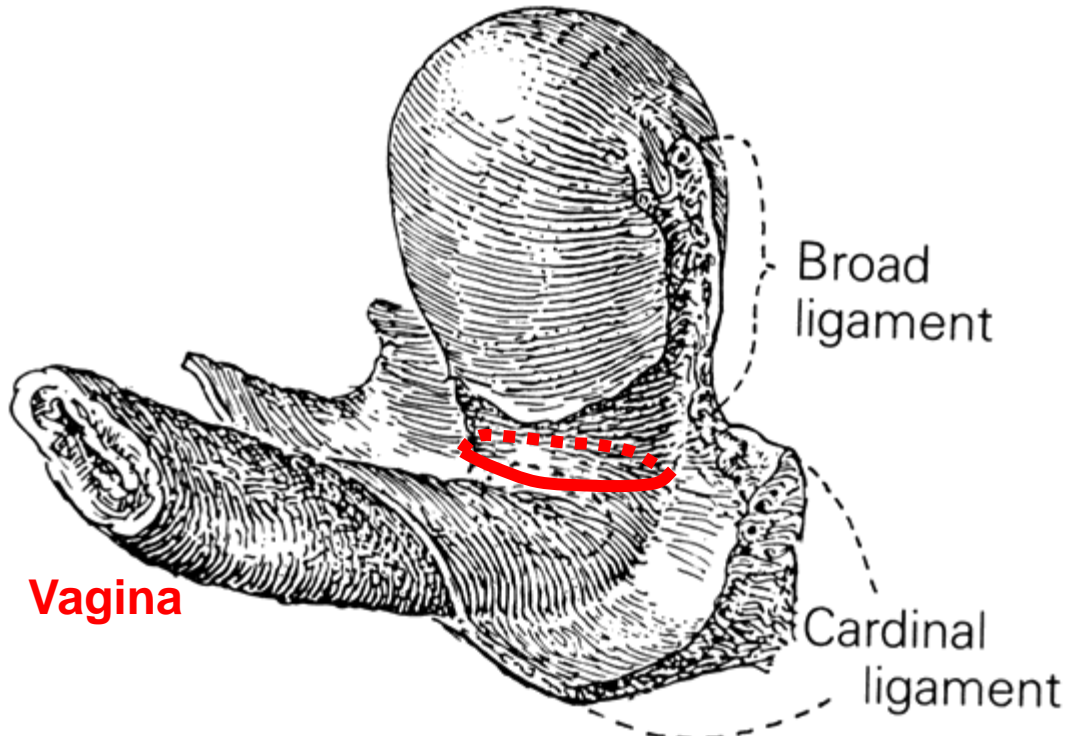
- Längden av slutna cervix = cervixpluggens längd → cerklaget så högt som möjligt
- Risk för glidning → förankra i kardinalligamenten
- Risk för herniering genom cerklaget → dra åt hårt



Broad  
ligament

Cardinal  
ligament

Vagina

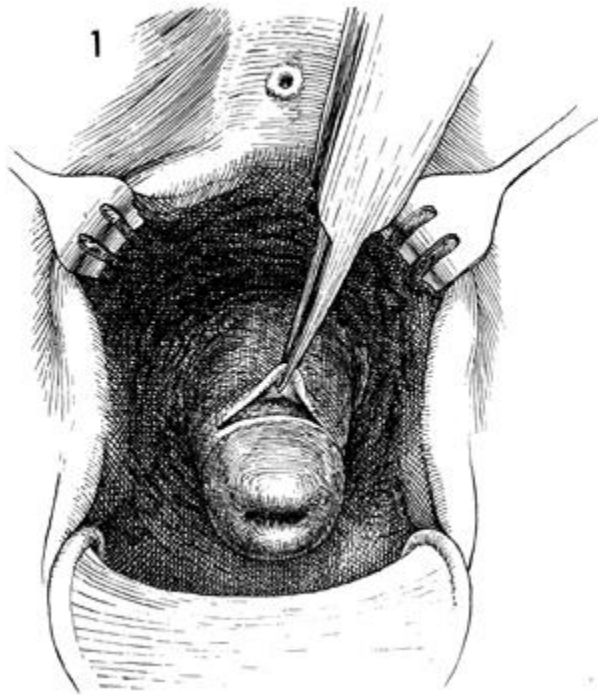


Broad  
ligament

Vagina

Cardinal  
ligament

# Shirodkar cerklage



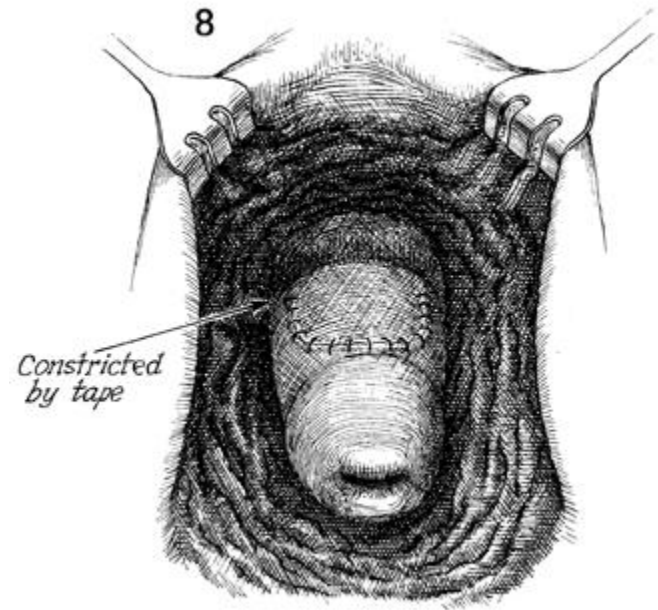
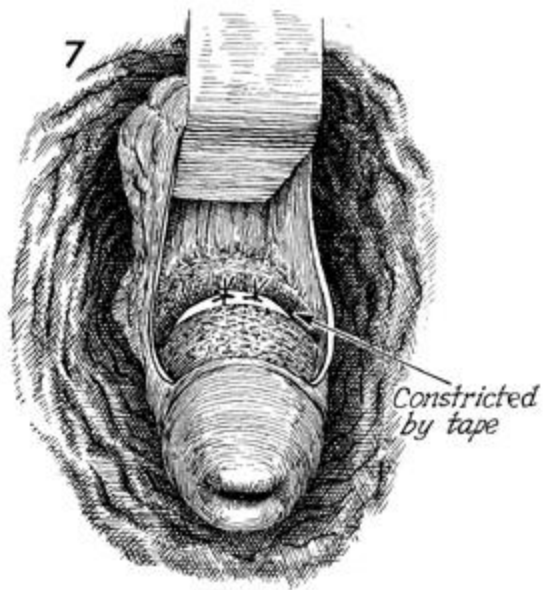
# Shirodkar cerklage



# Shirodkar cerklage

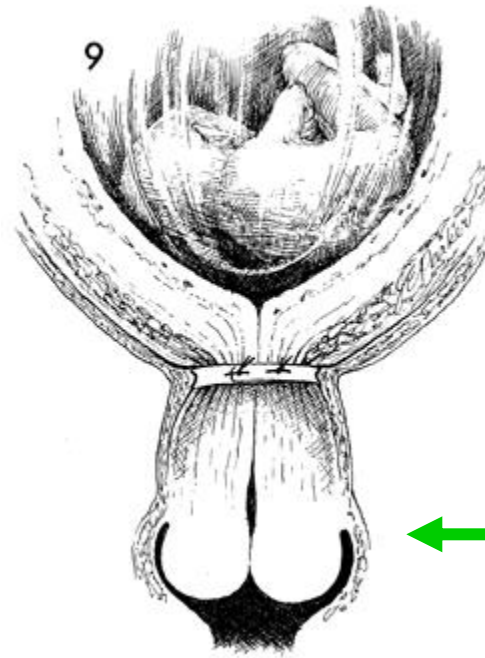


# Shirodkar cerclage





# Shirodkar cerclage



← Vaginal fornix





15 mm insnitt tvären  
högst upp främre fornix

Dissektion med  
sax 2,5-3 cm

Nålpets riktas SIAS  
höger, runt 180°

Diagram 1 shows a surgical incision in the nasal cavity. A red box with the number '1' is in the top left. A blue curved line indicates the incision site at the anterior fornix. Retractors are used to hold the incision open.

Diagram 2 shows the dissection step. A red box with the number '2' is in the top left. A blue dashed arrow points upwards from the incision site, indicating the direction of dissection.

Diagram 3 shows the needle tip directed to the right SIAS. A red box with the number '3' is in the top left. A blue arrow points from the incision site to the right SIAS. A yellow dashed circle highlights the area around the SIAS.

4 Bakifrån → framåt,  
riktas SIAS vänster,  
runt 180°

FIGURE 1. Shirodkar cerclage

